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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,677	07/31/2003	Michael Fogaing	1062702	7667
59152 7590 09/25/2007 OSLER, HOSKIN & HARCOURT, LLP (AVESTOR) 1000 DE LA GAUCHETIERE STREET WEST SUITE 2100 MONTREAL, QC H3B-4W5 CANADA			EXAMINER WALKER, KEITH D	
			ART UNIT 1745	PAPER NUMBER
			MAIL DATE 09/25/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/630,677	Applicant(s) FOGAING ET AL.	
	Examiner Keith Walker	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/12/07 has been entered.

Claims 1 & 3-15 are pending examination as discussed below.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1 & 3-15 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "a silicone elastomer including a thermally conductive filler", does not reasonably provide enablement for any elastomeric material for the heat sink. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims. The direction provided by the instant disclosure does not allow one of ordinary skill in the art to make the claimed invention with any type of elastomeric material. The specification only provides one example of

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an elastomeric material, which is the silicone elastomer with the thermally conductive filler. No other examples are provided to give a scope to the types of elastomeric materials that are considered to be inventive. The amount of experimentation needed to make and use the invention based on the disclosure would be undue since a lack of direction and examples are presented in the instant specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 11, 12 & 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 7,008,720 (Shimamura et al.) in view of US Patent 4,314,008 (Blake) and US Publication 2003/0147254 (Yoneda).

Shimamura et al. teach a polymer battery comprising a plurality of electrochemical cells, each comprising a plurality of laminates and current collecting terminal leads (8, 9), surface covering layers (9a, 9b) (heat sink) positioned adjacent and in mechanical contact with the terminal leads, and a battery outer sheath (3) (thermally conductive housing) (Figs. 4 & 5; 2:39-60, 8:12-22). The material used for the terminal leads, such as Cu, Fe, and stainless steel, are considered as electrically resistive and thermally conductive. The current collecting terminal lead is considered

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capable of being displaced from the battery outer sheath before the assembly of the polymer battery. It is the position of the examiner that the intended use "the film adapted to ease relative movement between said resilient heat sink material and said at least one of said walls" in the claim does not add structure to the claim. Intended use of a known component does not give it patentable weight. See *In re Thuau*, 57 USPQ 324, CCPA 979 135 F2d 344, 1943.

With respect to claim 3, Shimamura et al. teach the surface covering layers conform to the surface of the terminal leads (Figs. 4, 5).

With respect to claim 11, Shimamura et al. teach the surface covering layers are extending along the length of the electrochemical cells (Figs. 4, 5).

Shimamura et al. are silent to the use of an elastomeric material for the heat sink.

Yoneda teaches using a silicone elastomer sheet that has ceramic particles within the sheet as a thermally conductive material ([0154]). The silicone with ceramic particles provides improved thermal conductivity for transferring the heat from the source to the heat-dissipating casing.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the surface covering layers with the silicone elastomer compound including a ceramic filler to improve the cooling effect of the battery by improving the thermal conductivity of the material used.

Shimamura et al is silent to using a film between the heat sink material and the inner walls of the case.

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Blake teaches using heat sink grease between heat sinks, battery enclosures and thermal transfer blocks (5:1-10). The grease provides a good thermal contact between the interfaces of all the components, thereby increasing the thermal exchange between the components.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the battery of Shimamura et al with the thermal grease film of Blake to improve the contact between the components so good thermal transference is achieved. Furthermore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to add a thermally conductive grease since it has been held that it is *prima facie* obviousness to use a known material based on its suitability for its intended use (*Sinclair & Carroll Co. v. Interchemical Corp.*, 325 US 327, 65 USPQ 297 (1945), *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960) and *Ryco, Inc. v. Ag-Bag Corp.*, 857 F.2d 1418, 8 USPQ2d 1323 (Fed. Cir. 1988)).

3. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 7,008,720 (Shimamura et al.) in view of US Patent 4,314,008 (Blake) and US Publication 2003/0147254 (Yoneda) as applied to claims 1 & 12, and further in view of US Patent 4,729,060 (Yamamoto).

The teachings of Shimamura et al., Blake and Yoneda as discussed above are incorporated herein.

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Shimamura et al. and Yoneda are silent to the type of ceramic used for the silicone elastomer filler.

Yamamoto teaches using a silicone elastomer with a ceramic filler of alumina or boron nitride for a thermally conductive member (3:60-4:25). The silicone elastomer with the ceramic filler provides for high heat conductivity.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the ceramic filler taught by Yoneda with the alumina or boron nitride ceramic filler of Yamamoto to provide a material with high heat conductivity and to teach what type of ceramic materials to use for the filler.

4. Claims 1, 3, 11-13 & 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 7,008,720 (Shimamura et al.) in view of US Patent 4,729,060 (Yamamoto).

The teachings of Shimamura et al. as discussed above are incorporated herein.

Shimamura is silent to using a silicone elastomer material with a ceramic filler for the heat sink material and a film between the heat sink material and inner surface of the wall.

Yamamoto teaches using a silicone elastomer with a ceramic filler of alumina or boron nitride for a thermally conductive member (3:60-4:25). The silicone elastomer with the ceramic filler provides for high heat conductivity. A grease film is applied to one or both sides of the thermally conductive member.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the ceramic filler taught by Yoneda with the alumina or boron nitride ceramic filler of Yamamoto to provide a material with high heat conductivity and to teach what type of ceramic materials to use for the filler.

5. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimamura et al. (US 7,008,720 B2) in view of US Patent 4,314,008 (Blake) and US Publication 2003/0147254 (Yoneda) as applied to claims 1, 3 & 11 above.

The teachings of Shimamura et al., Blake and Yoneda as discussed above are incorporated herein.

The disclosure of Shimamura et al. differs from Applicant's claims in that Shimamura et al. do not teach the surface covering layer are separated into a plurality of ribbons which adapt to circumscribe and separate each ribbon from adjacent ribbons. However, it is the position of the examiner that the claimed configuration is a matter of choice, which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed electrochemical generator is significant. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

6. Claims 7-10 & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimamura et al. (US 7,008,720 B2) in view of US Patent 4,314,008 (Blake) and US Publication 2003/0147254 (Yoneda) as applied to claims 1, 3-6 & 11 above, and further in view of Wessman (US 6,705,418).

The teachings of Shimamura et al., Blake and Yoneda as discussed above are incorporated herein.

Shimamura et al. teach a polymer electrochemical generator as described above in Paragraph 6. However, Shimamura et al. do not teach the additional of a heat exchange apparatus positioned adjacent to the outer surface of the housing.

Wessman teaches a battery wherein the cap of the battery housing is configured with a plurality of fin-type members (projecting vanes) (444) that extend from an exteriorly exposed surface for enhancing thermal discharge of heat from the battery housing to air circulated across the fins (Figs. 8c; 12:22-46).

Therefore, it would have been obvious to one of ordinary skill in the art to incorporate a plurality of fin-type members on the exterior surface of the housing of Shimamura et al., because Wessman teaches the use of fins to enhance thermal discharge of heat from the battery.

7. Claims 1, 3 & 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al. (US 2003/0134190 A1) in view of US Patent 5,837,164 (Zhao).

With respect to claim 1, Ishida et al. teach a polymer battery comprising a plurality of electrochemical cells, each comprising a plurality of laminates and current collecting terminal leads (109), a positive temperature coefficient (PTC) thermal fuse (112) (heat sink) positioned adjacent and in mechanical contact with the terminal leads, and a battery metal sheath (102) (thermally conductive housing) (Figs. 1, 5, 21; [0008, 0085, 0103, 0120]). The material used for the terminal leads, such as copper and

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aluminum, are considered as electrically resistive and thermally conductive. The current collecting terminal lead is considered capable of being displaced from the battery metal sheath before the assembly of the polymer battery. Ishida et al. further teach the use of a insulating resin (110b) (low friction film) positioned between the inner surface of the housing and the thermal fuse. It is also the position of the examiner that the intended use "the film adapted to ease relative movement between said resilient heat sink material and said at least one of said walls" in the claim does not add structure to the claim. Intended use of a known component does not give it patentable weight. See *In re Thuau*, 57 USPQ 324, CCPA 979 135 F2d 344, 1943.

With respect to claim 3, Ishida et al. teach the thermal fuse conforms to the surface of the terminal leads (Figs. 4 & 5).

With respect to claim 11, Ishida et al. teach the thermal fuse is extending along the length of the electrochemical cells (Figs. 4 & 5).

Ishida et al. are silent to the type of material used for the PTC device.

Zhao teaches a positive temperature coefficient (PTC) device that comprises an elastomeric material (Abstract). The PTC device has a very low initial resistance and a high PTC effect (high resistance) at high temperatures (3:5-10).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the PTC device of Ishida et al. with the elastomer PTC device of Zhao to improve the operating characteristics of the thermal fuse.

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8. Claims 7-10 & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al. (US 2003/0134190 A1) and US Patent 5,837,164 (Zhao) as applied to claims 1-3 & 11 above, and further in view of Wessman (US 6,705,418).

Ishida et al. teach a polymer electrochemical generator as described above in Paragraph 7. However, Ishida et al. do not teach the additional of a heat exchange apparatus positioned adjacent to the outer surface of the housing.

Wessman teaches a battery wherein the exterior of the battery housing is configured with a plurality of fin-type members (projecting vanes) (444) that extend from an exteriorly exposed surface for enhancing thermal discharge of heat from the battery housing to air circulated across the fins (Figs. 8c; 12:22-46).

Therefore, it would have been obvious to one of ordinary skill in the art to incorporate a plurality of fin-type members on the exterior surface of the housing of Ishida et al., because Wessman teaches the use of fins to enhance thermal discharge of heat from the battery.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith Walker whose telephone number is 571-272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K. Walker


PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER